The Examiner objected to the specification and has indicated that the word "pyrolyze" is misspelled as "pyrolize" at page 1, line 30. The Applicant is unable to find the word "pyrolize" at this location, and is therefore unable to properly amend the specification to correct this error. If this misspelling exists anywhere in the specification, the Applicant respectfully requests that the Examiner bring such to the Applicant's attention, or to correct such misspelling by an Examiner's amendment, which the Applicant hereby authorizes.

The Examiner has objected to the specification and has noted that the Applicant has a typographical error in the number "9,750" at page 6, line 6. The Applicant has amended the specification to replace the comma with a decimal point so that it reads "9.750". Accordingly, the Applicant respectfully requests that the Examiner remove this objection.

The Examiner has objected to Claim 1 for the informality of the lack of the word "and" after the word "chamber." The Applicant has amended Claim 1 to add the word "and", and therefore respectfully requests the Examiner remove the objection.

35 USC 112

The Examiner has rejected Claims 1-3 under 35 USC 112, second paragraph, for the use of the term "the carbon" as lacking an antecedent basis. The Applicant has amended the Claim 1 to recite "the carbon particles", consistent with the terminology used in the preamble of the Claim. Accordingly, the Applicant respectfully requests the Examiner remove this rejection.

35 USC 102(a)

The Examiner has rejected Claims 1 and 3 under 35 USC 102(a) as being anticipated by Steinwandel et al. (USP 5,397,555). The Applicant has amended Claim 1 (and Claim 3 by virtue of dependency) to recite the additional limitations that the claimed method results in the formation of a synthesis gas, 2) the

reactions are conducted on the exhaust gas stream of a plasma arc waste treatment system, and 3) the reactions are between carbon particles, steam and carbon dioxide contained in said exhaust gas. None of these limitations are present in the '555 patent. As it is axiomatic that a proper rejection under 35 U.S.C. 102 must contain each and every limitation of the claim, ("[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration" W.L. Gore & Assocs. V. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983) Itaya et al. cannot possibly provide a basis for a proper rejection under 35 U.S.C. 102 as it does not disclose any of these limitations. Accordingly, the Applicant respectfully requests the Examiner remove this rejection.

35 USC 103(a)

The Examiner has rejected Claim 2 under 35 USC 103(a) as being anticipated by Steinwandel et al. (USP 5,397,555). While the Applicant has cancelled Claim 2, rendering this rejection moot, the Applicant would like to make the following observations with respect to still pending Claims 1 and 3. At the outset, as noted above, the Applicant has amended Claim 1 (and Claim 3 by virtue of dependency) to recite the limitations that the claimed method results in the formation of a synthesis gas, 2) the reactions are conducted on the exhaust gas stream of a plasma arc waste treatment system, and 3) the reactions are between carbon particles, steam and carbon dioxide contained in said exhaust gas. None of these limitations are present in the '555 patent, nor does the '555 patent teach or suggest any of these limitations. In fact, the '555 patent teaches directly away from these limitations, as the '555 patent is seeks complete combustion of the carbon particles, as opposed to the formation of a synthesis gas.

The '555 patent is concerned with combustion processes, and particularly concerned with the removal of carbon particles produced in diesel combustion engines (see column 1, lines 7-18). Not surprisingly, the '555 patent consistently teaches the operation of the process of the '555 patent in an environment with an

excess of free oxygen, leading to complete combustion of the carbon particles. For example, at column 2, lines 21-24, the '555 patent states that "[a]n object of the invention consists of the direct oxidative conversion or carbon particles in the oxygeneous medium of a free exhaust gas flow in a high-frequency-induced stationary plasma zone. Further, Claim 1 of the '555 patent recites "achieving a carbon particle burn-up in the excess oxygen of combustion processes using a fuel with atmospheric air." Similarly, the '555 patent demonstrates the operating principle of the method at column 7, lines 53-55 with 10% oxygen injected into the system.

In contrast, now pending Claim 1 seeks not to "combust" the carbon particles, but rather use them in a reaction with steam and carbon dioxide to form a synthesis gas. A synthesis gas may only be formed in an environment starved of free oxygen, as free oxygen will promote the reaction to completion. As such, the now pending claims, requiring the steam and carbon dioxide exhaust gas of a plasma arc waste treatment system as described in US Patent No. 5,666,891, which was incorporated into the specification of the now pending application in its entirety (see page 3, line 8), are readily distinguished from the '555 patent.

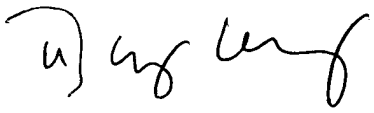
As taught by US Patent No. 5,666,891, and therefore by the pending application by virtue of incorporation, the gasses produced in a plasma arc waste treatment system are combustible gases formed as a result of fast pyrolysis. As defined in the '891 patent, fast pyrolysis generally results in at least 65% conversion of waste material to a useful gas for combustion. The plasma arc treatment system described in the '891 patent is "expected to provide a gas containing about: 2% carbon dioxide, 44% carbon monoxide, 43% hydrogen, 2% methane and the balance being light hydrocarbons." Notably, such a gas is starved of free oxygen. In contrast, the '555 patent requires the presence of free oxygen in the objects of the invention, the summary of the invention, the examples provided therein, and in the claims. As such, the '555 patent simply provides no teaching or suggestion whatsoever that carbon particles could be

effectively converted to a synthesis gas in the exhaust gas stream of a plasma arc waste treatment system. Indeed, as noted above, by requiring an excess of oxygen, the '555 patent teaches directly away from such a result.

Closure

Applicant has made an earnest attempt to place the remaining claims in the above referenced application in condition for allowance and action toward that end is respectfully requested. Should the Examiner have any further observations or comments, he is invited to contact the undersigned for resolution.

Respectfully submitted,



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Woskov	Art Unit: 1741
	Examiner: Wong, E
Serial No: 09/592,176	Paper No: 5
Filed: 06/12/00	File No: 20003
For: GAS PROCESSING FOR WASTE TREATMENT UNIT HAVING COMBINED JOULE AND ARC HEATING ELECTRODE	Date: January 18, 2002

Version of Amended Claims to Show Changes Made

Claims 1 was amended as follows where underlined matter was inserted and [bracketed] matter deleted:

1) (amended) A method of [treating] forming a synthesis gas from an a exhaust gas stream of a plasma arc waste treatment system containing [an oxidant] steam, carbon dioxide and carbon particles comprising the steps of:

a. introducing the exhaust gas stream into a processing chamber,

b. and exposing the gas stream to microwave energy having sufficient power and for a sufficient period of time to induce the carbon particles to [react] form said synthesis gas in a reaction with the [oxidant] steam and carbon dioxide.